Information Services hosted services and costs

1. Overview

Information Services (I.S.) has provided a popular hosting service for specialized departmental servers for many years. Servers hosted by I.S. benefit from being in an environmentally controlled area with secure access controls. These servers benefit from a centralized off-site backup, regular maintenance, daily monitoring.

This approach benefits both service departments who require servers for specialist business applications and academic departments for research work.

I.S. also provide, hosted "Virtual" servers, file Storage, hosted SQL databases, central backup service.

I.S. supports the view that corporate servers, file storage and databases should be housed and managed centrally. This ensures that these services receive the best management to ensure continuity of service and provide the best resilience for the Universities services.

This paper sets out the guidelines and criteria for centrally hosted services.

I.S. is happy to discuss requirements for specialist server hosting or storage to support the research, teaching and administrative functions of the University.

2. Services Offered

Server hosting

Virtual Servers

Storage (either raw storage or presented storage) and backup

SQL database hosting

Backup services

3. Service Descriptions

3.1 Physical Server Hosting

Is when a department has a server they want to house in the I.S. server room. The department will retain full ownership and responsibility for the server. Specification of the server must meet section 5 criteria.

Special notes:

If the server does not meet the specification criteria in section 5, then there may be a surcharge or a requirement to renew it.

For critical applications I.S. recommends departments make use of multiple servers. I.S. can house separate servers in separate server rooms, then replicate data and fail over the server/service this will depend heavily on the application being used.

With Server hosting, I.S. support the base server OS, core Microsoft server-based products such as SQL server, OS patches, and anti-virus protection. Departments may run third party applications, but these are either supported by the department or the supplier. I.S. can facilitate access to the server for support of third party applications.

Physical servers must meet the following standards. Specifications should be checked with I.S. staff prior to purchase.

Rack mounted

OS - Running MS Windows Server 2003, 2008, or Linux x32 or x64

Networking – NICs capable of running 1Gbps

Must be on either IS hardware maintenance or under manufacturers parts & labour warranty for the period of the hosting.

3.2 Virtual Server Hosting

A virtual machine (VM) is a software implementation of a machine (computer) that executes programs like a real machine. They have no direct correspondence to any real hardware. Essentially it is an abstraction of the computer hardware that allows a single machine to act as if it where many machines. Information Services uses HyperV to provide a VM infrastructure. I.S. runs many of its core services on VMs.

For most applications, using a virtual server (VM) is preferable to physical servers benefits include;

Cost;
VM's are significantly cheaper to implement as numerous VM's can be hosted on a single physical machine. Not only are the VMs sharing the same hardware, they also share power, networking, and storage infrastructure. Also you don't have to replace server hardware at regular intervals.

Disaster Recovery and reliability;
As VMs are not tied to specific physical servers, in the event of a disaster storage, server, or whole server room failure, the virtual server can easily be moved to another physical server. This enables the speedy recovery of services.

I.S. recommends the use of virtual machine servers in all cases except for processor or I.O. intensive applications. In these cases the application is best placed on physical hardware, or where third party software manufacturers do not support their application on a VM (very rare).

IS Virtual Server Service
Departments are able to purchase a virtual server instance that is then hosted on I.S. virtual machine infrastructure, this includes some 20 physical servers and 2 mirrored Storage Area Networks located in 2 separate server rooms.

The VM acts exactly the same as a physical server and provides an identical service with the additional advantages outlined above.

As with physical server hosting, IS support the base server OS, core Microsoft server-based products such as SQL server, OS patches, and anti-virus protection. I.S. also handles moving virtual machines as required. Departments may run third party applications, but these are either supported by the department or the supplier. I.S. can facilitate access to the server for support of third party applications.

3.3 Storage Hosting

I.S. can provide two types of storage:

SATA Storage

Is a low cost storage solution suitable for most applications for example file sharing.

SAS Storage

SAS storage is a high performance storage solution for I.O. intensive applications, for example large database applications.

Storage can be presented either directly to a virtual server to provide additional storage space to a departmental virtual server or as a file share to provide direct secure access to storage for users, groups or whole departments as a mapped drive letter.

3.4 SQL Database hosting

Information services have a central SQL database solution that is mirrored with automatic failover in the case of failure. This allows for high availability of the SQL databases and the services that depend upon them.

It may make sense for a department that has a server that just has a database on it to move it to the I.S. SQL mirrors this will allow the department to do away with having to host, maintain and support a server for this one application. Again I.S. is happy to discuss and review options with departments to find the most appropriate solution for a given department.

3.5 Backup services

Backup is important and often overlooked, it is important that all relevant data is backed up in the event of loss of live data. Presently I.S. has a IBM backup solution in place. Please see below for server and file storage backup costs.

4. General Notes: (for all services)

I.S. will have full administrator rights or root access (as appropriate) over any system (physical or virtual) or storage located in our server room.

I.S. will have the right immediately to disconnect and if necessary permanently remove from the network any server/service which disrupts other services.

Any charges incurred for these services must be paid in a timely manner.

Backup is highly recommended. If the customer opts not to use the I.S. central backup service then they are responsible for restoring any necessary data and configurations following a failure requiring I.S. to re-install or replace system software.

If the customer opts to do their own backup then they must pull the data off to their own backup facility over the network. Customers are responsible for ensuring the integrity of their backups. Physical backup devices (tape drives etc.) cannot be accommodated within the I.S. server rooms.

We endeavour to ensure that all servers located in our server rooms will have the most recent patches installed for their operating system, applications and Sophos anti-virus.

I.S. will reserve the right to not renew a contract on a server if it gets too old or becomes a potential security threat.

I.S. will have the right to turn down or defer requests for these services. Reasons might include lack of available staff, lack of available network connectivity, lack of expertise for specialist requirements, unsuitability of equipment, application, or content.

Non I.S. access to server rooms and servers

All access to the server rooms will be controlled by I.S.

Departments must lodge a list of personnel with permission to undertake work directly in the server with I.S. Such personnel would gain access by contacting Server Room staff.

Access will not be available when Server room staff, are not available.

Departments requiring remote access for nominated staff will be provided with a local administrator account which may be monitored.

Departments requiring remote access for non UWA 3rd party personnel will be provided with VPN access and a local administrator account which may be monitored

5. Costs

Please note that these charges may be subject to variation.

Physical Server Costs:

Physical servers hosted by I.S. have one-off setup costs then yearly maintenance costs.

One-off costs - charged when the contract is set up please note these costs may vary.

Rack mount server: approx. £800 - £2500+ to include 4 years extended parts & labour warranty. This can be purchased through the I.S. procurement team.

Software licences and Media – dependant on requirements

Installation of software other than the base operating system

Network connection to the main switch including cables, normally only one connection is required. However certain users may have a requirement for more than one connection £850 per connection (1Gbps or 100 Mbps)

Installation into the main server room, including fitting into rack, O.S. Installation £140 (includes 4 hours effort)

KVM switch including cables. This allows multiple servers to run off one keyboard/mouse/monitor setup. Each server is charged a proportion of the switch. £150 KVM connection for a single server

Annual Costs - charged when contract is set up then yearly on contract renewal

Location maintenance: includes externally provided switch & UPS maintenance. £200

Software maintenance charge: includes patching and upgrading servers. £140 (covering up to 4 hours of IS staff time per year)

Virtual Server Costs

One-off Costs
£700 Setup Cost which includes first year's rental based on the basic VM system of 2 processors, 2GB RAM, and 50GB SATA disk

Annual Costs
£500 is charged for a basic VM with 2 processors, 2GB RAM, and 50GB SATA disk space. Additional storage can be purchased, see costs below. Includes software maintenance as above

Storage Costs

Storage can be purchased but only as an annual charge.

SATA RAW (presented to server over Fibre Channel) Annual £1.25 per GB
SAS RAW (presented to server over Fibre Channel) Annual £2.50 per GB

Database Hosting Costs

One-off costs

Setup cost is £350 which includes first year's rental of storage up to 1GB
Additional storage is charged at £100 per GB

Annual Costs

£100 per GB of database includes backup.

Backup Costs

All backup costs are based on multiples of 50GB and are charged at £100 per 50GB annually.

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